

General Specifications

Model ISC40 Inductive Conductivity Sensor and Fittings

The model ISC40 sensors are designed for use with the EXA: ISC200 2-wire transmitters and the EXA: ISC402 4-wire analyzers. This combination exceeds all expectations for conductivity measurement in terms of: reliability, accuracy, rangeability and price performance.

The accuracy is 0.5% of reading plus 0.5 $\mu\text{S}/\text{cm}$ for any conductivity value: whether measured in rinse water or in concentrated acids. The materials of construction guarantee a long life under harsh industrial conditions:

- The erosion/abrasion resistant PEEK (Poly Ether Ether Ketone), which also features excellent chemical resistance in all solutions except Fluoric Acid or Oxidizing Concentrated Acids.
- The ultimate material in terms of chemical resistance: PFA for applications in Fluoric Acid and Oxidizing Concentrated acids (Nitric, Sulfuric, Oleum).

The PEEK sensor is provided with a rugged Stainless Steel mounting thread/nut/ gasket combination for ultimate flexibility in installation using bulk head installation technique. There is also a wide range of holders and options available for reliable in-line or off-line installation with double O-ring seals for long service life of the sensor. Additional models are available for use in Ball-Valve Insertion applications and in Sanitary Flange installations.

The PFA sensor comes with an integral lap-joint flange, because in applications, where this sensor is used, it is very difficult to find O-rings that are resistant to the process.

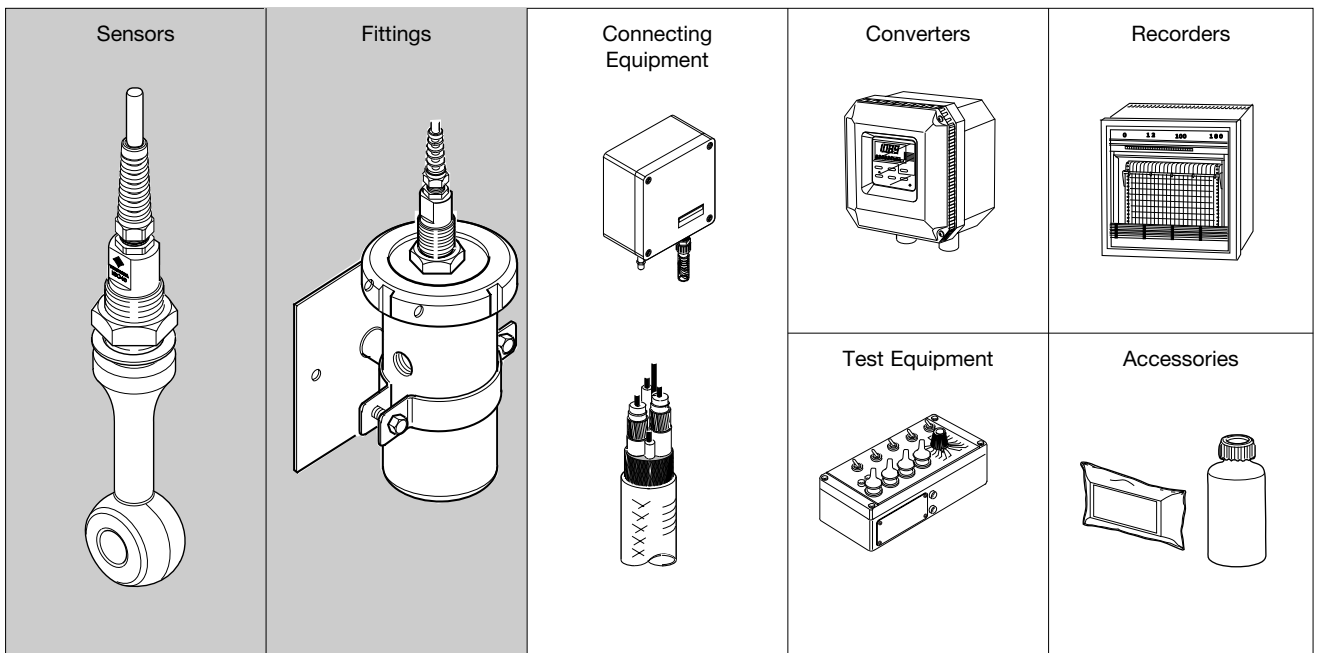
Both sensors have a large bore for optimal resistance to fouling processes and when properly installed, the flow will keep the sensor clean preventing measuring errors.



FEATURES AND APPLICATIONS

- Inductive Conductivity technique for elimination of fouling and polarization errors.
- Wide bore sensors for long term stability.
- Installation flexibility by wide range of holders and by the use of universal bulkhead construction.
- Wide rangeability in terms of Conductivity (1 $\mu\text{S}/\text{cm}$ to 2 S/cm) and temperature (-20 to 130 C).
- All applications where severe electrode fouling prevents the use of contacting electrodes.
- All ranges except the (ultra) pure water applications.
- All slurry applications where conventional systems suffer from plugging or erosion.
- All applications where the 6 decade rangeability is necessary for accurate process control.

SYSTEM CONFIGURATION



GENERAL SPECIFICATIONS

1. Model ISC40 Inductive conductivity sensor

A. Compatibility : ISC40G is suitable for use with both ISC402G and I(S)C200G inductive conductivity transmitter.

B. Hazardous area : ISC40S is suitable for use with the I(S)C200S conform to CENELEC, FM and CSA intrinsic safety standards

- CENELEC intrinsic safety: EEx ib [ia] IIC T6 for ambient temp. (ta) -10 to 40°C
: EEx ib [ia] IIC T4 for a ambient temp. (ta) -10 to 55°C
- CENELEC certificate no.: KEMA No Ex-93.C8739
- FM intrinsic safety : IS CL1, DIV1, GP ABCD T3B for ambient temp. (ta) -10°C to 55°C and T4 for ambient temp. (ta) -10°C to 55°C.
- FM Approval report : J.L. 1Y1A7.AX
- CSA intrinsic safety : Ex [ia] Class I, Division 1, Groups C and D, T4a
- CSA Approval file : LR 102851-1

C. Measuring range : 0- 2000 mS/cm at actual process temperatures. The sensor has an error of 0.5 uS/cm (PEEK sensors) or 1 uS/cm (PFA sensor) that must be considered when application range is chosen.

D. Installation factor : Cellconstant: The nominal cell constant of the sensor is 1.88/cm for the PEEK sensor types and 3.28/cm for the PFA sensor. The calibrated values are indicated on the cable markers and the actual installation can change this factor. If there is less than 25 mm spacing between sensor and holder, in-situ calibration is necessary to meet the specified accuracies. An indication is given in fig. 2

E. Process temperature range

Peek : -20 to 130 °C (0 to 270 °F) for
Response time 5 min. (90%)

PFA : -20 to 100 °C (0 to 212 °F)
Response time 10 min. (90%)

F. Process pressure

Peek : Maximum 20 bar (300 psi)
dependant on installation.

PFA :			
	°C (°F)	100 (212)	20 (36)
	BAR (PSI)	5 (71)	10 (142)

G. Materials

- Sensor wetted parts : Victrex PEEK (Poly-Ether-Ether-Ketone)
: PFA. (Dyneon Tetrafluoroethelyne copolymer)
- Sealing gasket : Viton
- Process adapters : AISI 316 SS, PVC or PVDF (only for PEEK)

H. Process connection : Process connection are made in combination with a variety of adapters and fittings. See relevant sections in this document.

I. Cables

- Connection cable : Integral connection cable in a variety of lengths up to 20 meter.
- Extension cable : Extension cable with WF10 junction box BA10 can be used to a total of 50 metres (fixed cable and extension cable).

J. Shipping details

- Package
- 3-5 meters : WxHxD = 350x270x50 mm
- 10-20 meters : WxHxD = 320x240x110 mm
- Packed weight approx.
- 03 m : 1.0 kg
- 05 m : 1.3 kg
- 10 m : 1.6 kg
- 15 m : 2.1 kg
- 20 m : 2.5 kg
- protection hose : 0.8 kg (approx.)

DIMENSIONS

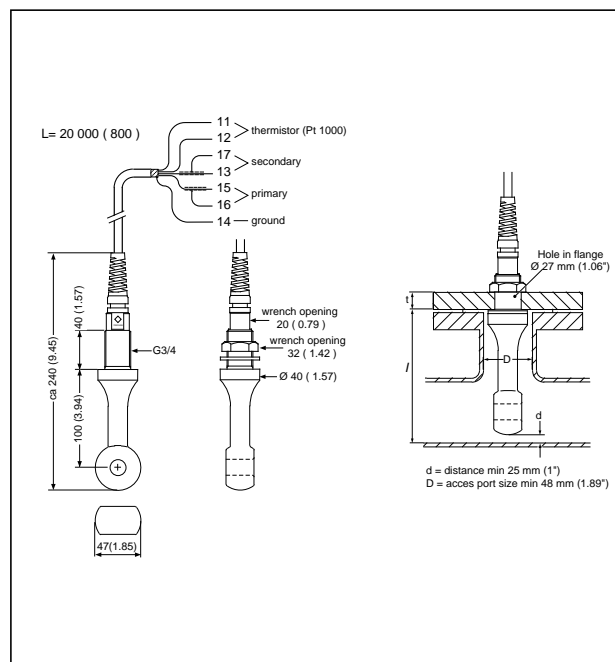


FIG. 1.

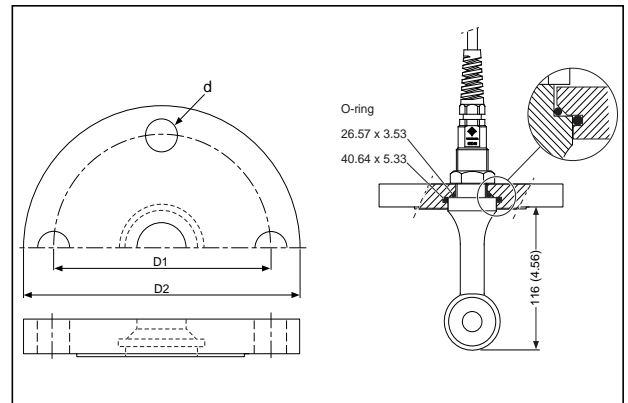
Note:

The ISC40 was previously supplied with a flat viton gasket for simple mounting. The fittings have been improved by the addition of "O"- ring seals which replace the flat gasket. We continue to supply the flat gasket with the ISC40G(S) -PG.. sensors for compatibility with existing installations. When using the sensor in combination with the new fittings, the flat gasket should be discarded.

MODEL AND SUFFIX CODES

Model	Suffix code	Option code	Description
ISC40G	.....	.....	General purpose inductive conductivity sensor
ISC40S	.....	.....	Intrinsically safe inductive conductivity sensor
Sensor type	-PG..... -PR..... -PS..... -TF.....	.....	PEEK, general model PEEK, retractable model PEEK, shaft model PFA, flange model
Temp. sensor	-T1..... -T3.....	.....	Pt1000 30K thermistor Note: For IC200 select only T3
Cable length	-03..... -05..... -10..... -15..... -20.....	.....	03 meter 05 meter 10 meter 15 meter 20 meter
Options		Material	Proc. Conn.
Flange adapters for -PG sensor	/FFJ5.....	PVDF	JIS 10K-50-RF
	/PFJ.....	PVC	JIS 10K-50-RF
	/SFA.....	AISI316 SS	2" ANSI 150 lbs
	/SFD.....	AISI316 SS	NW50-PN16
Screw-in adapter for -PG sensor	/SFJ.....	AISI316 SS	JIS 10K-50-RF
	/PSG.....	PVC	ISO 7/1-R2
	/FSJ.....	PVDF	ISO 7/1-R2
	/SSG.....	AISI316 SS	ISO 7/1-R2
Flange adapters for -PS sensor	/SFT.....	AISI316 SS	Sanitary Tuchenhagen
	/STC1.....	AISI316 SS	Sanitary 2" tri-clamp
	/STC2.....	AISI316 SS	Tri-clamp complete
Protection Hose for -TF sensor	/PH -□□.....	03m/05m/10m/15m/20m	the same length as the cable
Certificates	/M.....		Material certificate (only apply to SS316 wetted part)
	/Q.....		Quality certificate

DIMENSIONS OF PROCESS ADAPTERS



Flange adapter for -PG sensor

DIMENSIONS	mm (inches)			
	d	D1	D2	Material
/FFJ5	Ø 19 (0.75)	120 (4.70)	155 (6.1)	PVDF
/PFJ	Ø 19 (0.75)	120 (4.70)	155 (6.1)	PVC
/SFA	Ø 19 (0.75)	121 (4.75)	152 (6.0)	SS
/SFD	Ø 18 (0.71)	125 (5.00)	165 (6.5)	SS
/SFJ	Ø 19 (0.75)	120 (4.70)	155 (6.1)	SS

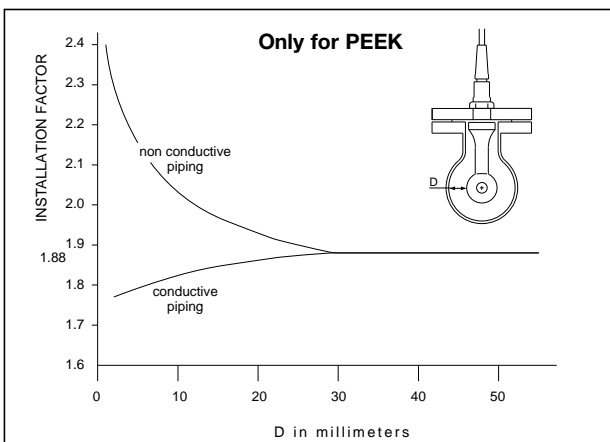
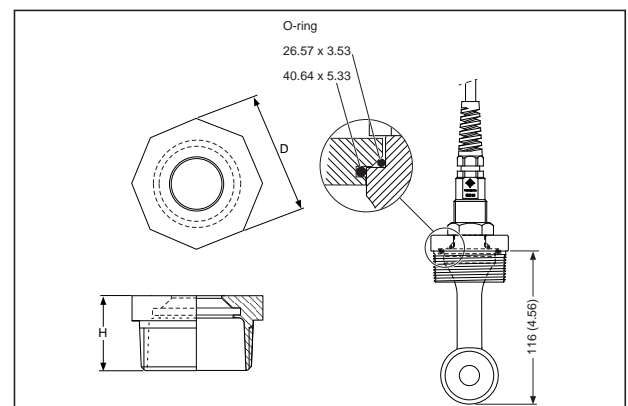


FIG. 2. Actual installed cell-constant as function of spacing around the sensor.



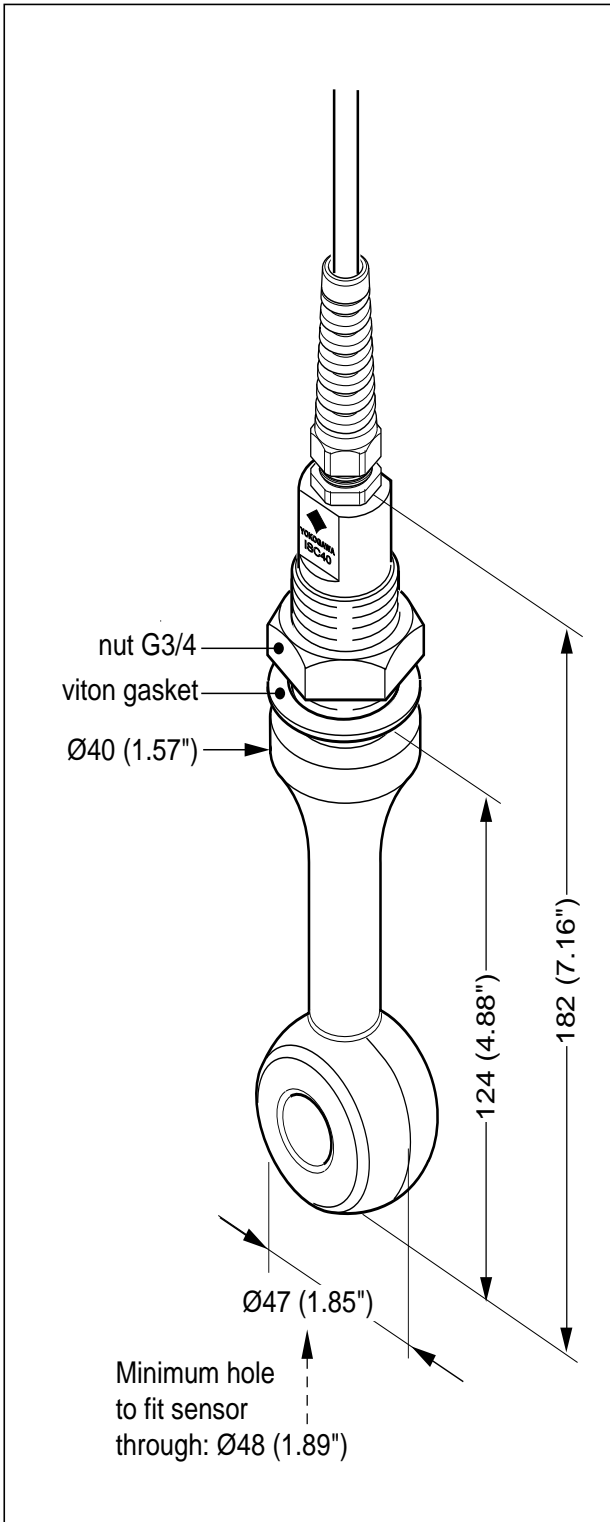
Screw-in for -PG sensor

DIMENSIONS	mm (inches)			
	Thread	D	H	Material
/FSJ	R2	75 (3)	48 (1.9)	PVDF
/PSG	R2	75 (3)	42 (1.7)	PVC
/SSG	R2	64 (2.5)	39 (1.5)	SS

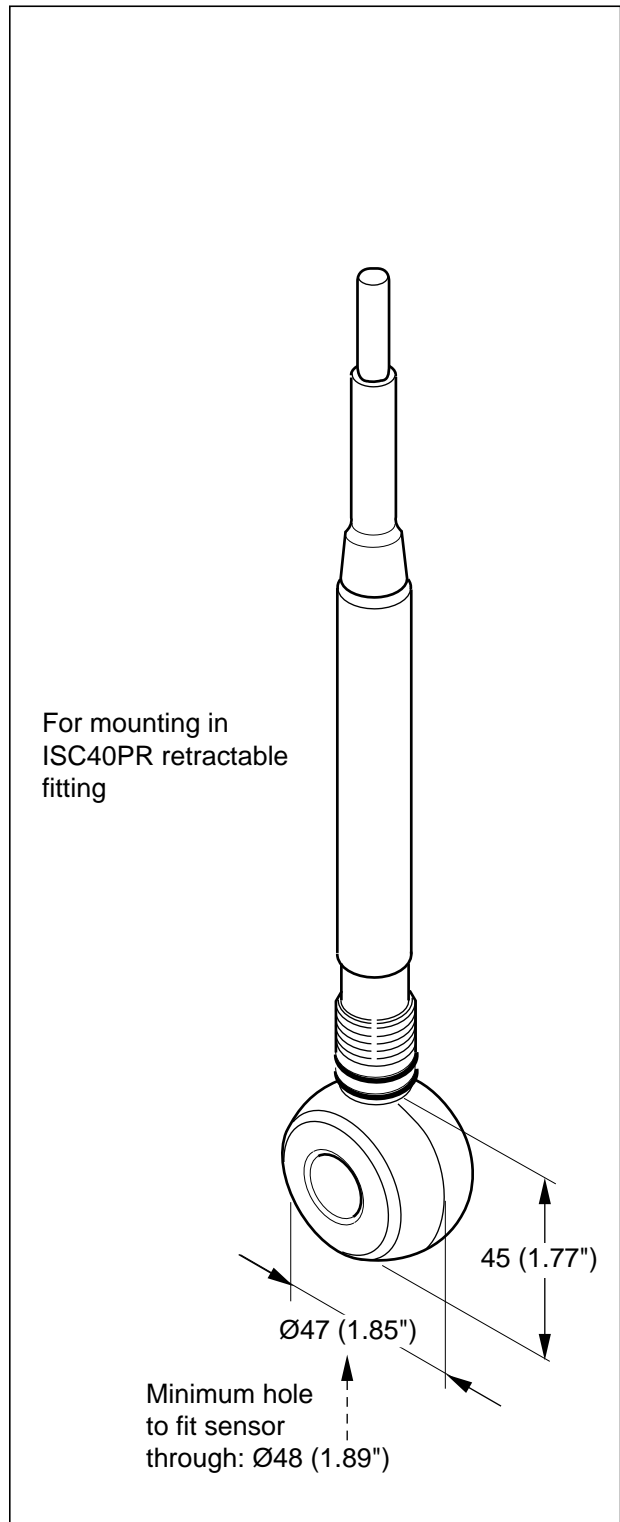
Note
ISO7/1 - R2 = 2" BSPT

DIMENSIONS OF SENSORS

Unit: mm (inches)



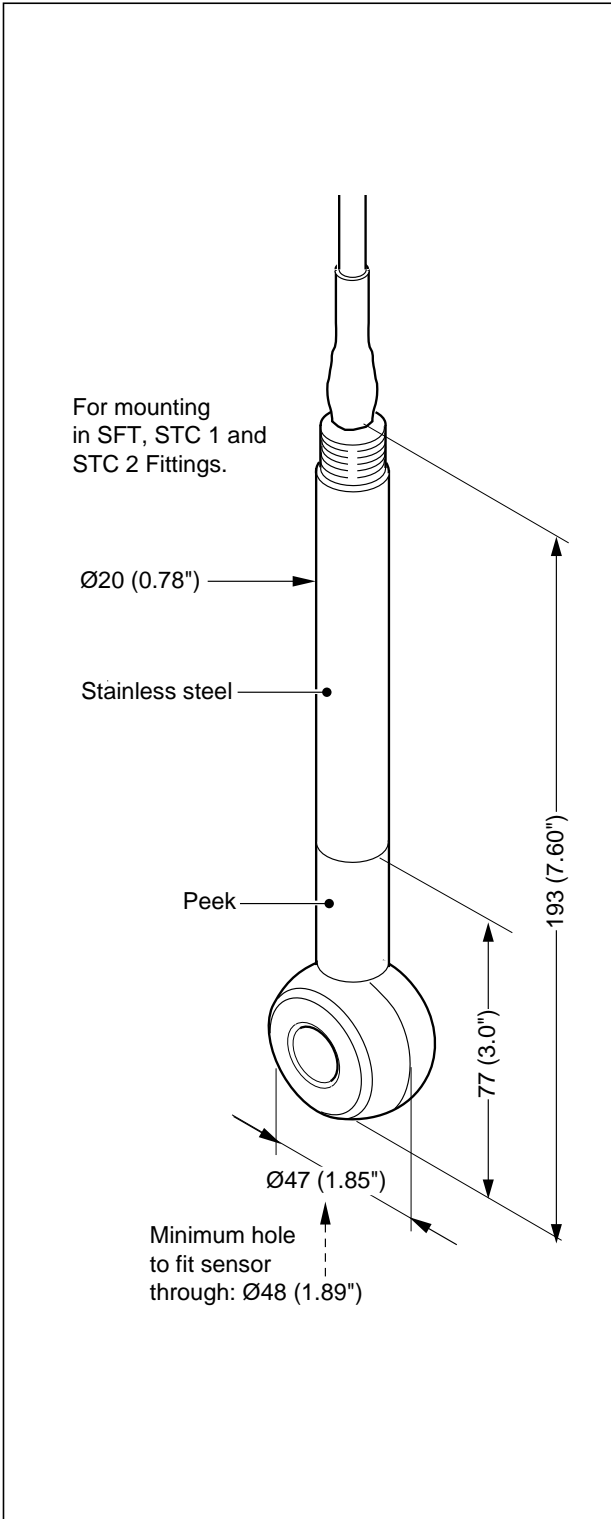
ISC40-PG



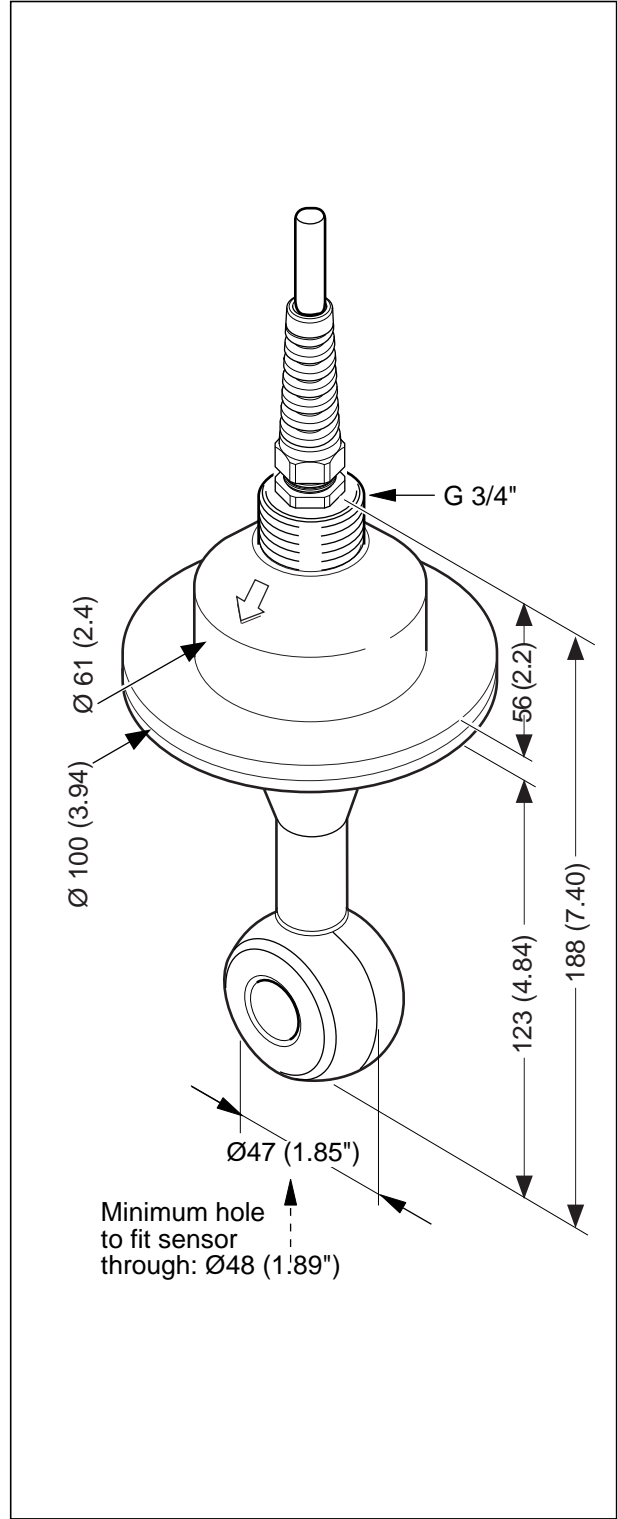
ISC40-PR

DIMENSIONS OF SENSORS

Unit: mm (inches)



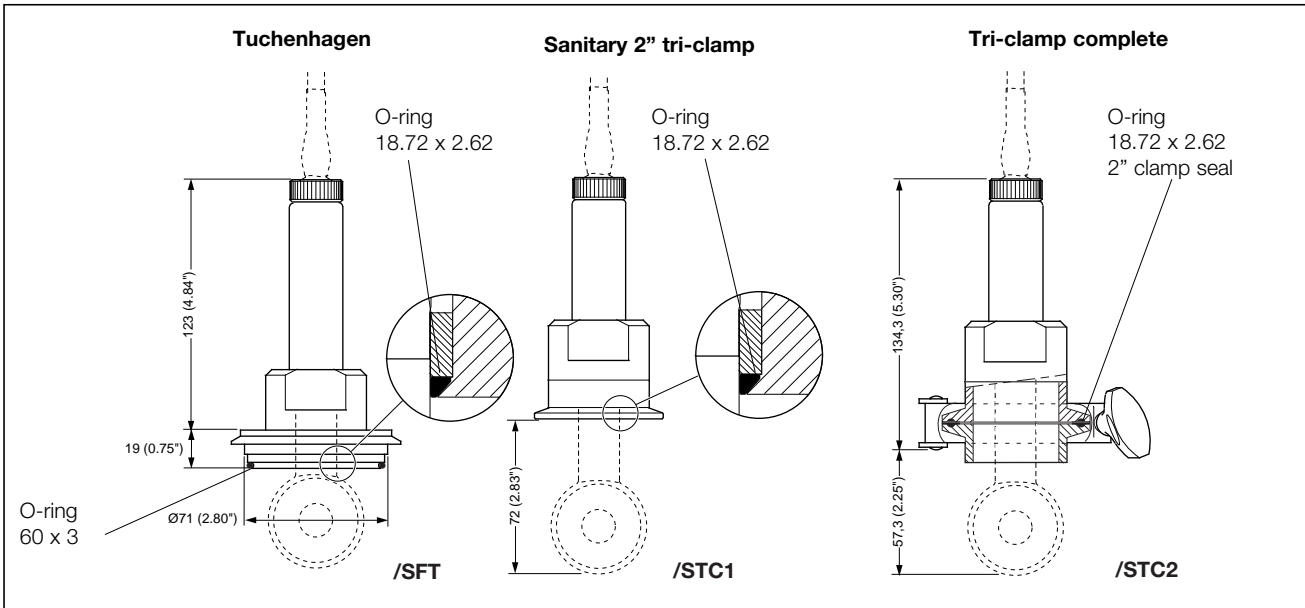
ISC40-PS



ISC40-TF

OPTIONS FOR -PS SENSOR

Unit: mm (inches)



Options for the ISC40-PS (/SFT, /STC1, /STC2)

ACCESSORIES

O - rings spare parts for ISC40 sensor & Options as spare parts

Dimensions	O-ring material				Quantity
	EPDM	Viton	Silicon	KALREZ	
O- rings for option FFJ5 /FSJ /PFJ /PSG /SFA SFD /SFJ /SSG / 40.64 x 5.33 / 26.57 x 3. 53 40.64 x 5.33 26.57 x 3. 53	K1500CA	K1500CB	K1500CC	K1500CD K1500CH	5 sets of 2 O-rings 1 O-ring 1 O-ring
O- rings for option /SFT 8.72 x 2.62 / 60 x 3	K1500CM	K1500CL	K1500CN		5 sets of 2 O-rings
O- ring for option /STC1 18.72 x 2.62	K1500CQ	K1500CP	K1500CR		5 O-rings
O- rings for option /STC2 18.72 x 2.62 / 2" clamp seal	K1500CT	K1500CS	K1500CU		5 sets of 2 O- rings
O- rings for protection hose 25.9 x 3.53 / 23.52 x 1.78		K1500DT			5 sets of 2 O- rings
O- rings for old models Viton gasket		K1500AM			5 O-rings

Option	Description	Material	Process connection	Part number
/FFJ5	Flange adapter	PVDF	JIS 10K-50-RF	K1541ZC
/PFJ	Flange adapter	PVC	JIS 10K-50-RF	K1541ZB
/SFA	Flange adapter	AISI316 SS	2" ANSI 150 lbs	K1541ZR
/SFD	Flange adapter	AISI316 SS	NW50-PN16	K1541ZQ
/SFJ	Flange adapter	AISI316 SS	JIS 10K-50-RF	K1541ZE
/FSJ	Screw-in adapter	PVDF	ISO 7/1-R2	K1541ZD
/PSG	Screw-in adapter	PVC	ISO 7/1-R2	K1541ZN
/SSG	Screw-in adapter	AISI316 SS	ISO 7/1-R2	K1541ZL
/SFT	Flange adapter	AISI316 SS	Sanitary Tuchenhagen	K1541ZP
/STC1	Flange adapter	AISI316 SS	Sanitary 2" tri-clamp	K1541ZG
/STC2	Flange adapter	AISI316 SS	Tri-clamp complete	K1541ZF
All adapters include Viton O-ring (s)				
/PH03	03 meter protection hose			K1500DN
/PH05	05 meter protection hose			K1500DP
/PH10	10 meter protection hose			K1500DQ
/PH15	15 meter protection hose			K1500DR
/PH20	20 meter protection hose			K1500DS

Fittings for ISC40G(S)-PG Inductive Conductivity Sensors

For liquid analysis, the sensors are frequently mounted in either a flow or an immersion fitting. Yokogawa supplies for the model ISC40 inductive conductivity sensors a full range of fittings with particular emphasis on designs that reduce installation and maintenance time and consequently save operation costs.

A wide choice of construction materials gives the user the optimal solution for any process considering chemical resistance, pressure and temperature specifications.

The flow fittings are used for installation of the sensors in sample by-pass lines. This makes maintenance easy without having to interrupt the main process stream. The sub-assemblies simplify mounting of the sensors direct into process lines or vessels. This is particularly important where sample lines give problems, for instance with settling slurries.

FEATURES

- Wide choice of construction materials.
- Built in drain on stainless steel flow fitting.
- Quick disconnect direct insertion sub assemblies.
- High temperature PVC immersion fitting with optional flanged process connection for adjustable insertion depth.
- High pressure and temperature specifications.
- Electrolytically polished stainless steel fittings for optimal corrosion resistance.

MODEL AND SUFFIX CODES

MODEL	SUFFIX CODE	OPTION CODE	DESCRIPTION
ISC40FF	.....	.....	Flow fitting
Material	-S .....	.....	.AISI 316 stainless steel
	-P .....	.....	.Polypropylene (PP)
	-F .....	.....	.PVDF (KYNAR)
Process connection	A .....	.....	.NPT
	J .....	.....	.ISO 7/1 R
Options			Material Proc. conn.
Flange adapters	/FS2	AISI 316 SS	DN25-PN10
	/FP2	PP	N25-PN10
	/FF2	PVDF	DN25-PN10
	/FSJ2	AISI 316 SS	JIS 10K-25-RF
	/FPJ2	PP	JIS 10K-25-RF
	/FFJ2	PVDF	JIS 10K-25-RF
Mounting set	/MS	Wall/pipe for SS flow fitting	
	/MP	Wall/pipe for PP/PVDF flow fitting	
Material certificate	/M	3.1.B acc. EN-10-024 (DIN 50-049-3.1b)	

1. MODEL ISC40FF Flow fitting

A. Process temperature

- Model ISC40FF-S : Maximum 150 °C (300 °F)
- Model ISC40FF-P : Maximum 100 °C (210 °F)
- Model ISC40FF-F : Maximum 130 °C (270 °F)

B. Process pressure

- Model ISC40FF-S : Max. 1.0 MPa (150 psi) at 150 °C (300 °F)
- Model ISC40FF-P : Max. 0.6 MPa (90 psi) at 20°C (70°F)
Max. 0.1 MPa (15 psi) at 100°C (210°F)
- Model ISC40 FF-F : Max. 1.0 MPa (150 psi) at 20°C (70°F)
Max. 0.1 MPa (15 psi) at 120°C (250°F)

C. Wetted materials

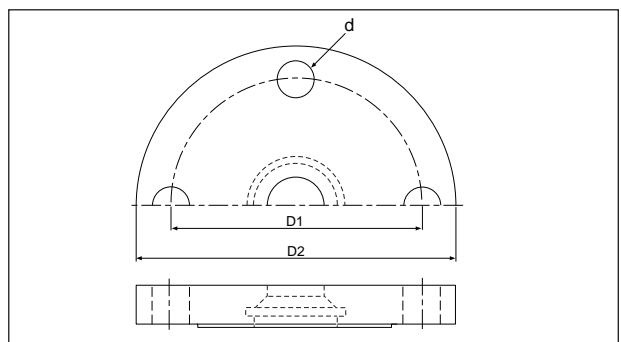
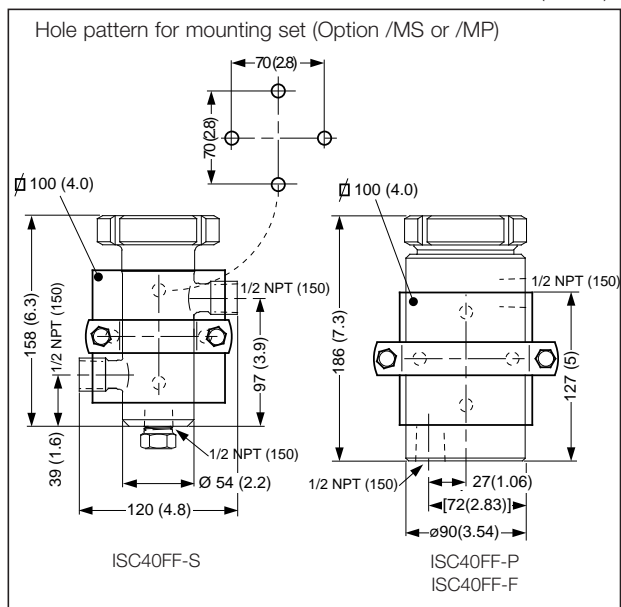
- Model ISC40FF-S : AISI 316 Stainless Steel
- Model ISC40FF-P : Polypropylene
- Model ISC40FF-F : PVDF (KYNAR®)

Non-wetted materials

- Nut : AISI 304 stainless steel.
- Mounting set : AISI 304 Stainless Steel (optional)
- Flange adapters : AISI 304 Stainless Steel (optional)

DIMENSIONS

Unit: mm (inches)



DIMENSIONS

mm (inches)

	d	D1	D2	Material
/FS2	Ø 14 (0.55)	85 (3.3)	115 (4.5)	SS
/FP2	Ø 14 (0.55)	85 (3.3)	115 (4.5)	PP
/FF2	Ø 14 (0.55)	85 (3.3)	115 (4.5)	PVDF
/FSJ2	Ø 19 (0.75)	90 (3.5)	125 (4.9)	SS
/FPJ2	Ø 19 (0.75)	90 (3.5)	125 (4.9)	PP
/FFJ2	Ø 19 (0.75)	90 (3.5)	125 (4.9)	PVDF

2. MODEL ISC40FD Immersion fitting

A. Process temperature : Max. 80 °C (180 °F) PVC
 : Max. 150 °C (300 °F)
 AISI316 Stainless steel

B. Process pressure
 - PVC : Max. 0.2 MPa (30 psi) at 20°C (70°F)
 Max. 0.1 MPa (15 psi) at 80°C (180°F)
 - AISI316 Stainless steel : 10 bar

C. Wetted materials
 - Probe tube : C-PVC
 - Process sealing O-ring : Viton
 - Flange : PVC (Optional)

Non wetted materials
 - Cable insulation : Thermoplastic rubber

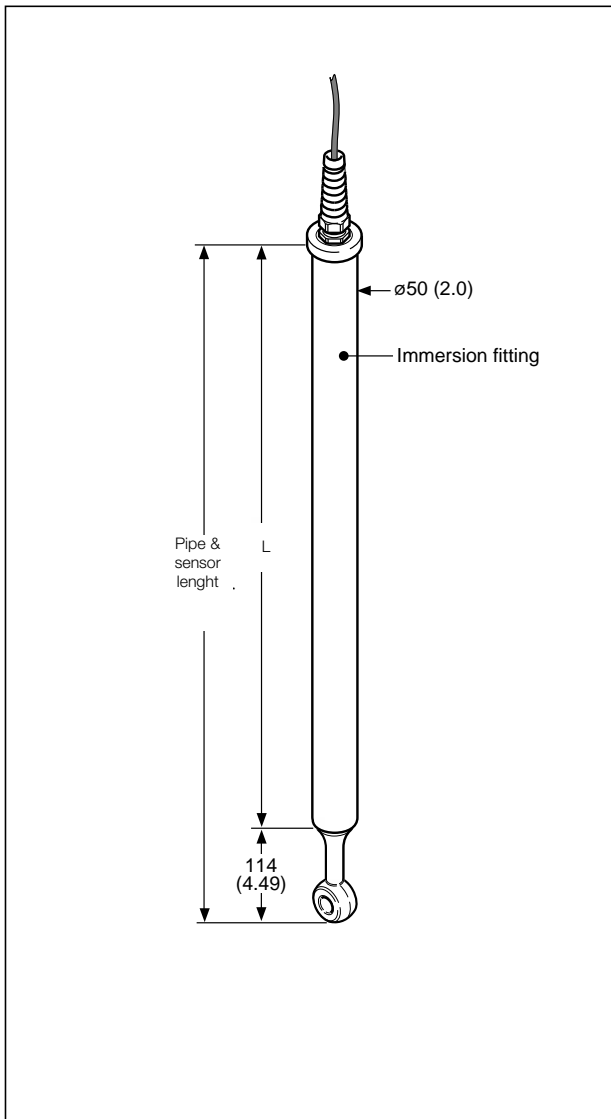
D. Process connection :
 - Adjustable flange : Hole pattern according to DIN DN50-PN10 and ANSI 2" 150 lbs. Only for the PVC (Optional).
 - Mounting set : Galvanized steel (Optional).

Note: Adjustable flange (/FA) is only for the PVC fitting

MODEL AND SUFFIX CODES

Model	Suffix code	Option code	Description
ISC40FD	.....	.....	Immersion fitting
Material	-S.....		AISI 316 Stainless steel
	-V.....		PVC-C
Pipe length	-□.....		Between 0,5 2,0 meter Example: 05 = 0,5 m
Options		/MS1	Pipe mounting set (Carbon steel)
		/FA	Adjustable flange with DIN DN50-PN10 and ANSI 2" 150 lbs hole pattern (only for PVC)
		/PH5	Protection hose for 5 m cable
		/PH10	Protection hose for 10 m cable
Material certificate		/M	3.1.B, acc. EN 10 204

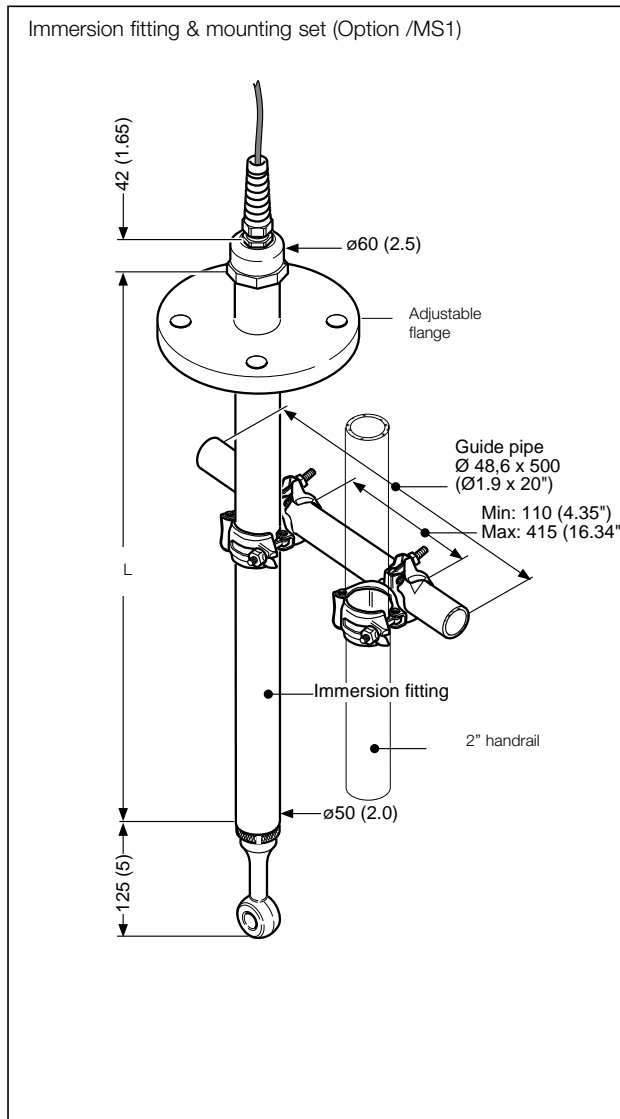
DIMENSIONS



ISC40FD-S

GS 12D8J2-E-H

Unit: mm (inches)



ISC40FD-V

3. MODEL ISC40FS Direct insertion subassemblies

A. Process temperature

- Model ISC40FS-STW/SCS/S2W : Maximum 150 °C (300 °F)
- Model ISC40FS-PCS : Maximum 100 °C (210 °F)
- Model ISC40FS-FCS : Maximum 130 °C (270 °F)

B. Process pressure

- Model ISC40FS-STW/SCS/S2W : Max. 1.0 MPa (150 psi) at 150°C (300°F)
- Model ISC40FS-PCS : Max. 0.6 MPa (90 psi) at 20°C (70°F)
Max. 0.1 MPa (15 psi) at 100°C (210°F)
- Model ISC40FS-FCS : Max. 1.0 MPa (150 psi) at 20°C (70°F)
Max. 0.1 MPa (15 psi) at 120°C (250°F)

C. Wetted materials

- Model ISC40FS-STW/SCS/S2W : AISI 316 Stainless steel
- Model ISC40FS-PCS : Polypropylene
- Model ISC40FS-FCS : PVDF (KYNAR®)
- All models : Viton O-ring, EPDM (only S2WN and STWN)

Non wetted materials

- Nut : AISI 304 Stainless steel

D. Process connection

- Model ISC40FS-STW : 3" tri-clamp
- Model ISC40FS-S2W : 2" tri-clamp
- Model ISC40FS-SCS/PCS/FCS : 2" screw-in coupling

E. Shipping details

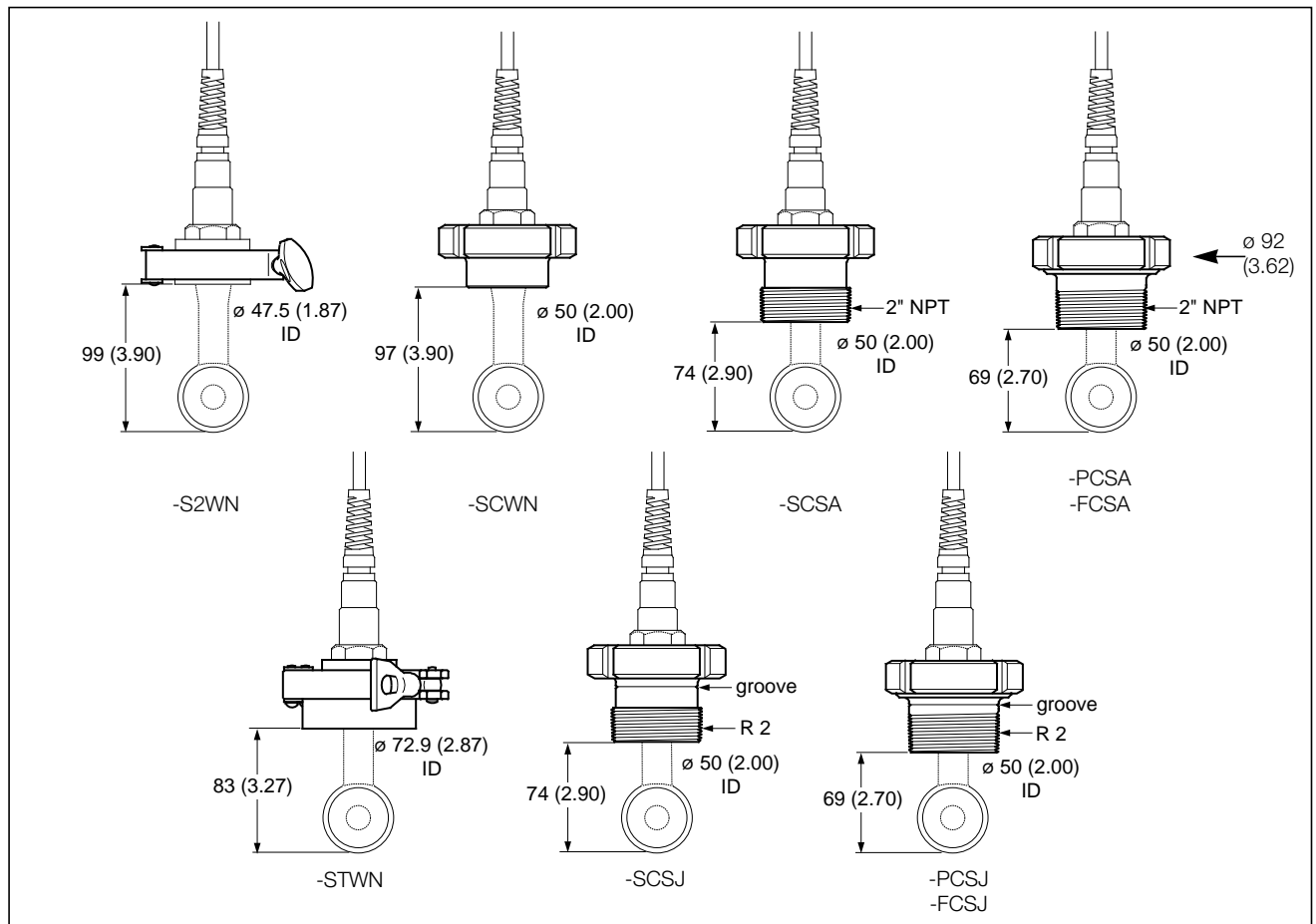
- Dimensions : Refer to section Dimensions
- Package : Normally packed with sensor
- Weight : 500 g. (1 lbs)

MODEL AND SUFFIX CODES

Model	Suffix code	Option code	Description
ISC40FS	.....	.....	Flow fitting subassembly
Material	-F .....	.....	PVDF
	-P .....	.....	Polypropylene
	-S .....	.....	Stainless Steel
Process connection	CS .....	.....	Coupling screw-in
	CW .....	.....	Coupling welded
	TW .....	.....	3" tri-clamp welded
	2W .....	.....	2" tri-clamp welded
Thread type NPT or R	A .....	.....	NPT
	J .....	.....	ISO 7/1 R
	N .....	.....	No thread (for weld-in couplings)
Options		/M	Material certificate 3.1.B acc. EN 10 204

DIMENSIONS

Unit: mm (inches)



ACCESSORIES**Spare part sensor carriers and O-rings for the flow through sub assemblies and fittings**

Part no.	Description	Material	O - ring
K1541KC	2" tri-clamp carrier incl. 2 O - rings	AISI 316 Stainless steel	EPDM
K1541KB	3" tri-clamp carrier incl. 2 O - rings	AISI 316 Stainless steel	EPDM
K1541KD	2" carrier incl. 2 O - rings	PVDF	Viton
K1541KL	2" carrier incl. 2 O - rings	Polypropylene	Viton
K1541KA	2" carrier incl. 2 O - rings	AISI 316 Stainless steel	Viton

O - rings spare parts for sensor ISC40FD and ISC40FS

Dimensions	O-ring material				Quantity
	EPDM	Viton	Silicon	KALREZ	
O- rings for model ISC40FD-S 39.35 x 2.62 / 26.57 x 3.53 39.35 x 2.62 26.57 x 3.53	K1500CE	K1500CF	K1500CG	K1500CV K1500CH	5 sets of 2 O - rings
1 O-ring					
O- rings for model ISC40FD-V 39.35 x 2.62 / 26.57 x 3.53 44.17 X 1,78	K1500CX	K1500CW	K1500CY		5 sets of 3 O - rings
O- rings for old model ISC40FD-V 44.17 X 1,78					K1541ZS	5 O-rings
O- rings for model ISC40FS /PSCJ /PCSA /FCSJ /FSCA 40.64 x 5.33 / 26.57 x 3.53 56.52 x 5.33 40.64 x 5.33 26.57 x 3.53 56.52 x 5.33	K1500DF	K1500DE	K1500DG	K1500CD K1500CH K1500DH	5 sets of 3 O - rings
O- rings for model ISC40FS /SCSJ /SCSA /SCWN 40.64 x 5.33 / 26.57 x 3.53 Ring NW50 40.64 x 5.33 26.57 x 3.53 56.52 x 5.33					K1500DB	K1500DA	K1500DC	5 sets of 3 O - rings
O- rings for model ISC40FS /S2WN 40.87 x 3.53 / 26.57 x 2.62 2" seal-clamp	K1541ZH	K1500DJ	K1500DK		2 sets of 3 O-rings
O- rings for model ISC40FS /STWN 40.87 x 3.53 / 26.57 x 2.62 3" seal-clamp					K1541ZK	K1500DL	K1500DM	2 sets of 3 O-rings
O- rings for old model ISC40 PCSJ /PCSA /FSCJ /FSCA 56.52 x 5.33		K1541ZM			5 O-rings
O- rings for old model ISC40 SCSJ /SCSA /SCWN NW25 / NW50		K1541ZJ			2 sets of 2 O - rings
O- rings for old model ISC40 FD and FS Viton gasket		K1500AM			5 O-rings

ACCESSORIES

O - ring spare parts for sensor ISC40FF

Dimensions	O-ring material				Quantity
	EPDM	Viton	Silicon	KALREZ	
O- rings for model ISC40FF-S 40.64 x 5.33 / 26.57 x 3.53 Ring NW50 40.64 x 5.33 26.57 x 3.53 53.34 x 5.33 O- ring for old model ISC40FF-S ring NW25 / ring NW50 Viton gasket	K1500DB	K1500DA	K1500DC		5 sets of 3 O-rings
				K1500CD K1500CH K1500DD	1 O-ring 1 O-ring 1 O-ring
O- ring for model ISC40FF-F and ISC40FF-P 40.64 x 5.33 / 26.57 x 3.53 56.52 x 5.33 40.64 x 5.33 26.57 x 3.53 53.34 x 5.33 O- ring for old model ISC40FF-F and ISC40FF-P Viton gasket 56.52 x 5.33	K1500DF	K1500DE	K1500DG		5 sets of 3 O-rings
				K1500CD K1500CH K1500DD	1 O-ring 1 O-ring 1 O-ring
		K1500AM K1541ZM			5 O-rings 1 O-ring

Options ISC40FF as spare parts

Option	Description	Material	Process connection	Part number
/FS2	Flange adapter	AISI 316 SS	DN25-PN10	K1521AN
/FP2	Flange adapter	PP	N25-PN10	K1521AQ
/FF2	Flange adapter	PVDF	DN25-PN10	K1521AP
/FSJ2	Flange adapter	AISI 316 SS	JIS 10K-25-RF	K1543KL
/FPJ2	Flange adapter	PP	JIS 10K-25-RF	K1543KM
/FFJ2	Flange adapter	PVDF	JIS 10K-25-RF	K1543KN
/MS	Mounting set		Wall/pipe for SS flow fitting	K1541ZZ
/MP	Mounting set		Wall/pipe for PP/PVDF flow fitting	K1541ZU

Options ISC40FD as spare parts

Option	Description	Material	Process connection	Part number
/MS1	Pipe mounting set	Carbon steel	DIN DN50-PN10 ANSI 2" 150 lbs hole pattern (only for PVC)	K1541ZY
/FA	Adjustable flange			K1520EV
/PH5	Protection hose for 5 m cable			K1500CJ
/PH10	Protection hose for 10 m cable			K1500CK

Retractable fitting for ISC40G(S)-PR for Inductive Conductivity sensor

The ISC40PR retractable fitting can be applied in all processes where it is necessary to remove the sensor without interrupting the process. The Yokogawa design ensures the safe retraction of the sensor from the process without requiring a shut-down.

The optional adapters make selection of a suitable installation easy. The flanged connection is available in JIS, DIN or ANSI version. The threaded connections are available in R2 or 2" NPT. When inserted, the probe can be locked at any position (between the minimum and maximum) with a locking ring. In addition, the optional drain port makes it possible to relieve the pressure before complete disassembly.

The choice between stainless steel and titanium (as construction materials) makes use in many applications possible.

Yokogawa recommends using the sensor ISC40-□-PR-□□-□□. For model code see page 14. For safety reasons Yokogawa recommends to use a flanged ball-valve.

FEATURES

- Adjustable insertion depth for optimal positioning in the process.
- Easy cleaning of the sensor.
- Damped probe retraction by o-ring friction with pressurized systems.
- Adaptable to most installations by a range of options.
- Optional drain port for relieving pressure, prior to extraction.

GENERAL SPECIFICATIONS

a. Materials:

Wetted parts
 Model ISC40PR-S (Stainless steel)
 Stainless steel AISI 316
 - Probe Stainless steel AISI 316
 - O-ring seals Viton 70° shore

Model ISC40PR-T (Titanium)
 Titanium Grade 2 or 3
 - Probe Stainless steel AISI 316
 - O-ring seals Viton 70° shore
 Non-wetted parts
 - Stainless steel (AISI 316) and polyphenylene sulphide (PPS)

b. Insertion length

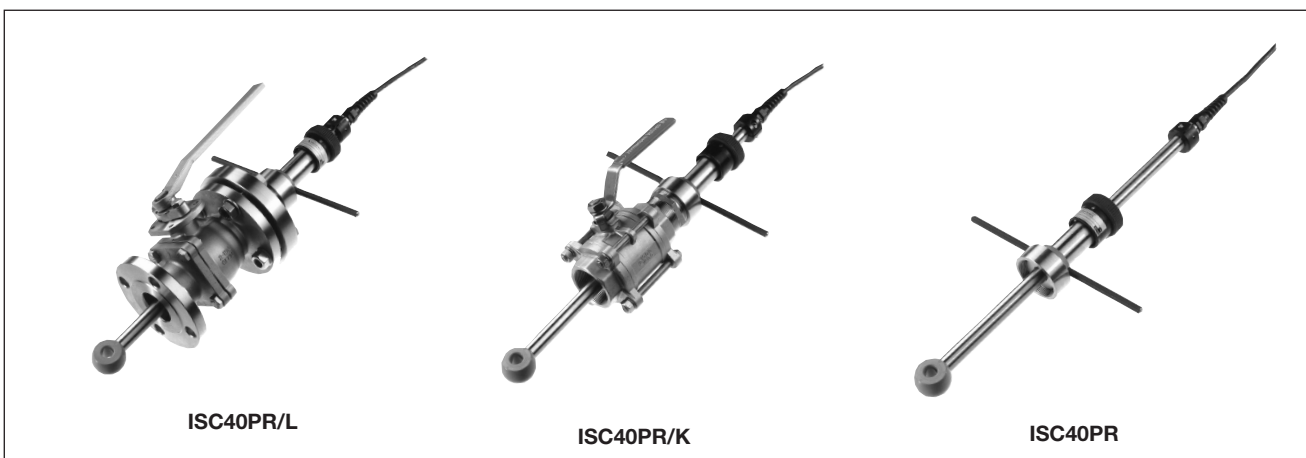
The probe length can be adjusted to a maximum of either 0.5 or 1 metre. The actual probe insertion length depends on the use of optional adapters and/or ball valves. The dimensional drawing indicates the maximum insertion length for both specified probe lengths.

c. Pressure / temperature ratings

- Static conditions 2 MPa at 20 °C
 500 kPa at 130 °C
 - Operating conditions maintenance
 max. 500 kPa
 max. 130 °C
 - Flange ratings
 DIN flange DN50 PN16
 ANSI flange 2" 150 lbs
 JIS flange 16K - 50

d. Weight

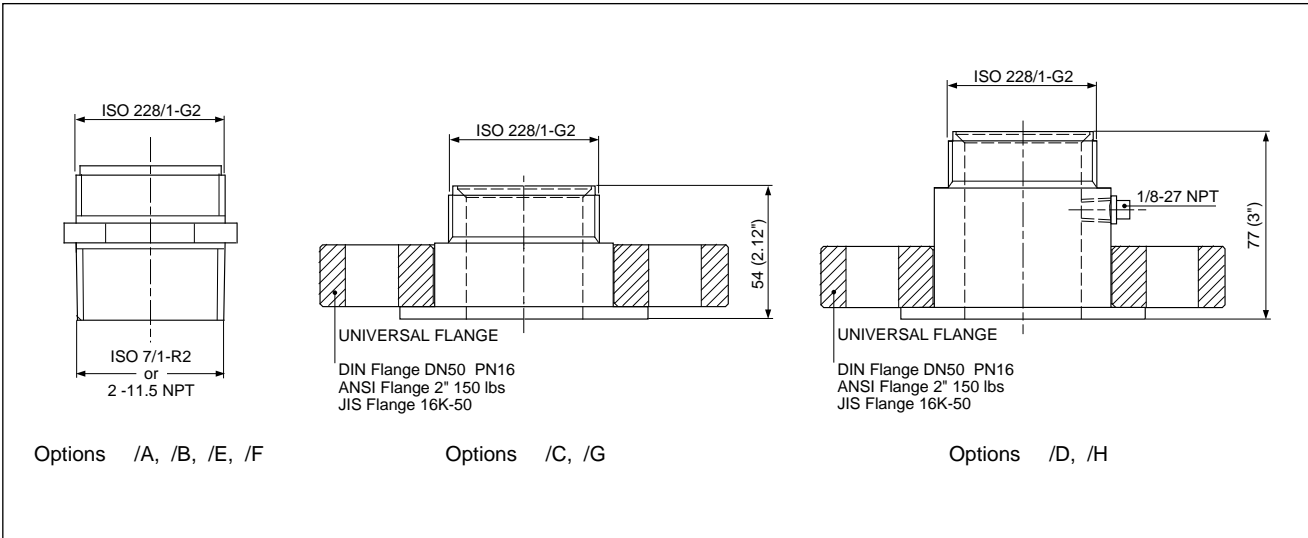
Approx 2.5 kg. (stainless steel version without ball-valve and adapters)



NOTE:
 Sensor shown for reference should be ordered separately

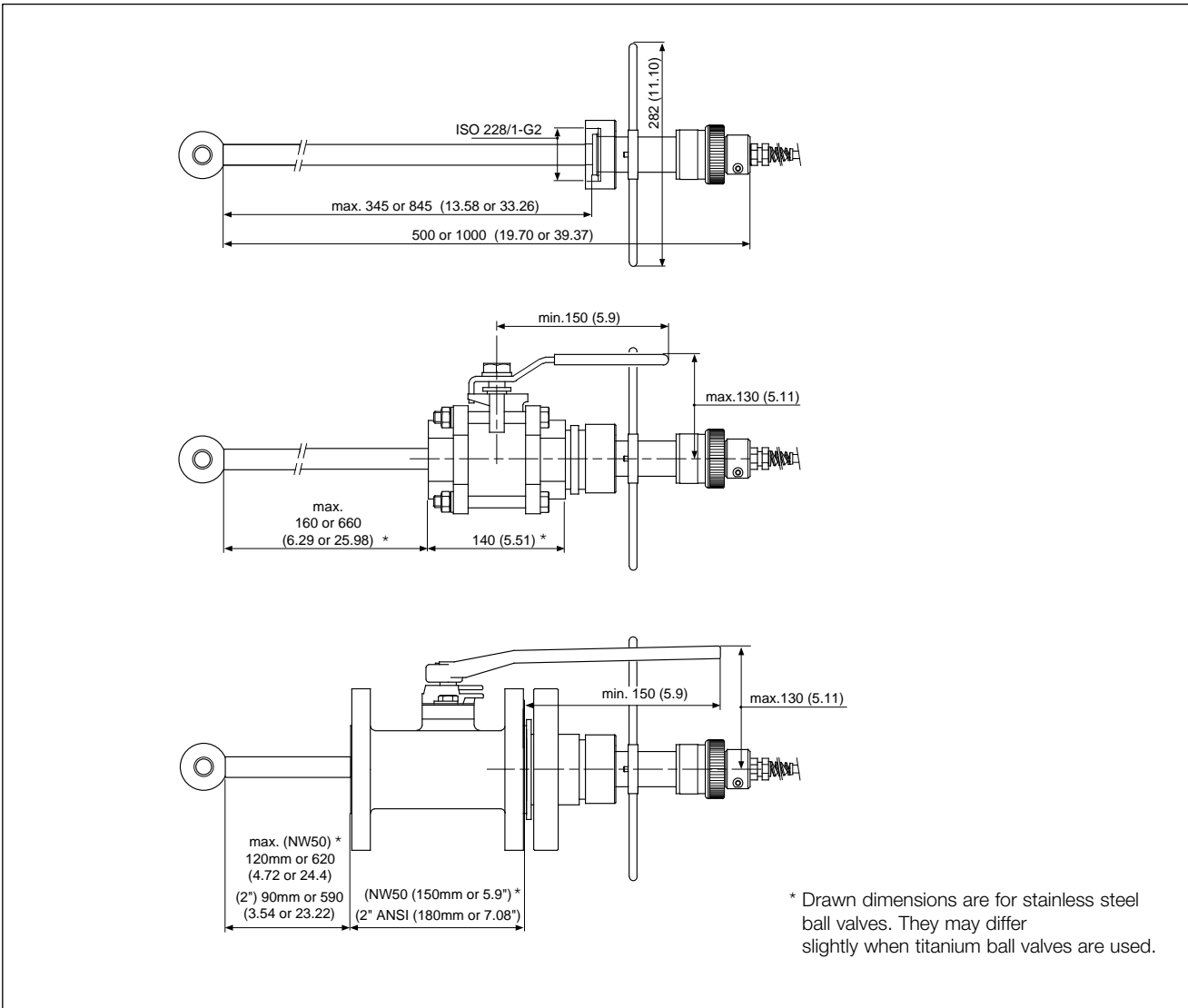
OPTIONS FOR -PR SENSOR

Unit: mm (inches)



EXTERNAL DIMENSIONS

Unit: mm (inches)



MODEL- AND SUFFIX CODES

Model	Suffix code	Option code	Description
ISC40PR			Retractable Fitting 1 1/2" BSP-female
Material	-S		Stainless steel AISI 316
	-T		Titanium Grade 2 or 3
Probe length	-05		0.5 m
	-10		1.0 m

OPTION CODES

Option code	Description	Material
/M	Material certificate 3.1.B according to EN 10 204 (DIN 50 049) (on wetted parts)	
/T	Test certificate for hydrostatic pressure test (2 MPa at ambient temperature)	
/A	Adapter R2-G2	Stainless steel
/B	Adapter 2" NPT-G2	Stainless steel
/C	Flange adapter	Stainless steel
/D	Flange adapter for drain	Stainless steel
/E	Adapter R2-G2	Titanium Grade 2 or 3
/F	Adapter 2" NPT-G2	Titanium Grade 2 or 3
/G	Flange adapter	Titanium Grade 2 or 3
/H	Flange adapter for drain	Titanium Grade 2 or 3
/J	Ball valve R2	Stainless steel
/K	Ball valve 2" NPT	Stainless steel
/L	Ball valve 2" ANSI Flanged	Stainless steel
/N	Ball valve DN 50 PN16 Flanged	Stainless steel

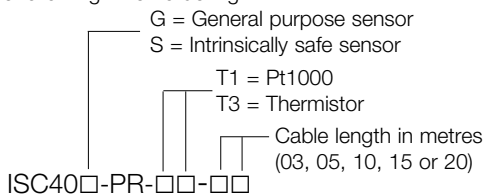
Titanium ball valves are available as separate item

Model	Option code	Description
BV40		Titanium Ball Valve 2"
	/P	Rc 2
	/Q	2" NPT
	/R	2" ANSI
	/S	NW 50

Note: When specifying ISC40PR with a ball valve, ensure that the correct adapter is specified also.
 Example: ISC40PR-S-05/B/K
 Assembly made of stainless steel, 0.5 metres long, with a 2" NPT adapter, and 2" NPT threaded ball valve. The flanged adapter is designed to suitable 2" ANSI and 50 mm DIN flanges.

ORDERING INSTRUCTIONS FOR SPARE SENSORS

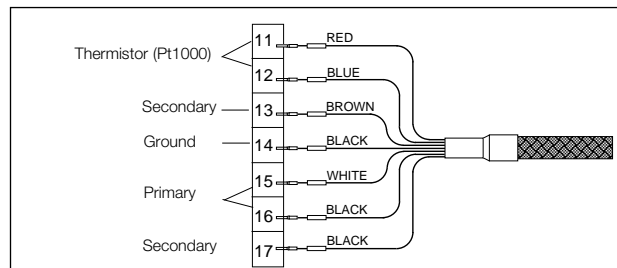
Specify the following when ordering



Options ISC40PR as spare parts

Partnumber	Option	Description
K1541DQ	ISC40PR/J	Ball valve R2
K1541DR	ISC40PR/C	Flange adapter
K1541DS	ISC40PR/D	Flange adapter for drain
K1541DT	ISC40PR/G	Flange adapter
K1541DU	ISC40PR/H	Flange adapter for drain
K1541DW	ISC40PR/K	Ball valve 2" NPT
K1541DX	ISC40PR/L	Ball valve 2" ANSI Flanged
K1541DY	ISC40PR/N	Ball valve DN 50 PN16 Flanged
K1541EJ	ISC40PR/A	Adapter R2-G2
K1541EM	ISC40PR/B	Adapter 2" NPT-G2
K1541EN	ISC40PR/E	Adapter R2-G2
K1541EP	ISC40PR/F	Adapter 2" NPT-G2

WIRING DIAGRAM



Partnumber	Option	Description
K1541DA		Ball valve 1" ANSI 150 lbs
K1541DB		Ball valve DIN DN25 PN16
K1541DC		Ball valve G1"
K1541DD		Ball valve 1" NPT
K1500BG		Viton O-ring set
K1500EA		EPDM O-ring set
K1500EB		2 KALREZ 70 shore O-rings 20.22 x 3.53
K1500EC		1 KALREZ 70 shore O-ring 47.22 x 3.53
K1500ED		2 KALREZ 70 shore O-rings 15.6 x 1.78

CHEMICAL COMPATIBILITY CHART

			Material							
			PVDF (Kynar)	S.S. 316	VITON	PEEK	PP	PVC	PFA	
			Temp. °C % Conc.	20 60 100	20 60 100	20 60 100	20 60 100	20 60	20 60	20 60 100
Inorganic acid	Sulfuric acid	10	0 0 0	X X X	0 0 0	0 0 0	0 0	0 X	0 0 0	
		50	0 0 0	X X X	0 0 0	0 0 X	0 0	0 0	0 0 0	
		95	0 X -	X X X	0 0 0	- - -	X -	X X	0 0 0	
		fuming	- - -	- - -	0 0 0	- - -	- -	- -	0 0 0	
	Hydrochloric acid	10	0 0 0	- - -	0 0 0	0 0 X	0 0	0 X	0 0 0	
		sat.	0 0 0	- - -		0 0 X	0 0	0 0	0 0 0	
	Nitric acid	25	0 0 X	X X X	0 0 X	0 0 0	0 0	0 X	0 0 0	
		50	0 0 X	X X X	- - -	X X X	X -	0 X	0 0 0	
		95	0 X -	0 0 0	- - -	- - -	- -	- -	0 0 0	
	fuming	- - -	0 0 0	- - -	- - -	- -	- -	0 0 0		
	Phosphoric acid	25	0 0 0	- - -	0 0 0	0 0 0	0 0	0 X	0 0 0	
		50	0 0 0	X X X	0 0 0	0 0 0	0 0	0 0	0 0 0	
95		0 0 0	0 0 0	X X -	0 0 0	0 0	0 0	0 0 0		
Hydrofluoric acid	40	0 0 0	- - -	0 0 0	- - -	0 0	0 X	0 0 0		
	75	0 0 0	- - -	0 0 0	- - -	0 0	X X	0 0 0		
Organic acid	Acetic acid	10	0 0 0	0 0 X	- - -	0 0 0	0 0	0 X	0 0 0	
		glacial	0 X -	0 0 X	- - -	0 0 X	0 X	X X	0 0 0	
	Formic acid	80	0 0 0	X X X	- - -	X X X	0 0	0 -	0 0 X	
Citric acid	50	0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0	0 0 0		
Alkali	Calcium hydroxide	sat.	0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Potassium hydroxide	50	0 0 X	0 0 0	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Sodium hydroxide	40	0 0 X	0 0 0	X X X	0 0 0	0 0	0 X	0 0 0	
	Ammonia in water	30	0 0 0	0 0 0	X X X	0 0 0	0 0	0 X	0 0 0	
Acid salt	Ammonium chloride	sat.	0 0 0	X X X	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Zinc chloride	50	0 0 0	X X X	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Iron (III) chloride	50	0 0 0	- - -	0 0 0	0 0 0	0 0	0 0	0 0 0	
Basic salt	Sodium sulfite	sat.	0 0 0	0 0 0	- - -	0 0 0	0 0	0 0	0 0 0	
	Sodium carbonate	sat.	0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0	0 0 0	
Neutral salt	Potassium chloride	sat.	0 0 0	X X X	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Sodium sulfate	sat.	0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Calcium chloride	sat.	0 0 0	X X X	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Sodium chloride	sat.	0 0 0	X X X	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Sodium nitrate	50	0 0 0	X X X	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Aluminium chloride	sat.	0 0 0	- - -	0 0 0	0 0 0	0 0	0 0	0 0 0	
Oxidizing agent	Hydrogen peroxide	30	0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Sodium hypochloride	50	0 0 0	X X X	0 0 X	0 0 0	X X	X X	0 0 0	
	Potassium dichromate	sat.	0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0	0 0 0	
	Chlorinated lime		0 X -	X X X		X X X	- -	0 0	0 0 0	
Organic solvent	Ethanol	80	0 0 X	0 0 0	X - -	0 0 0	0 0	0 X	0 0 0	
	Cyclohexane		0 0 X	0 0 0	0 0 0	0 0 0	- -	0 0	0 0 0	
	Toluene		0 0 0	0 0 0	- - -	0 0 0	X -	- -	0 0 0	
	Trichloroethane		X X X	0 0 X	X X X	0 0 0	- -	- -	0 0 0	
	Water		0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0	0 0 0	

O = can be used
 X = shortens useful life
 - = cannot be used

NOTE:

Information in this list is based on our general experience and literature data and given in good faith. However Yokogawa is unable to accept responsibility for claims related to this information.

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